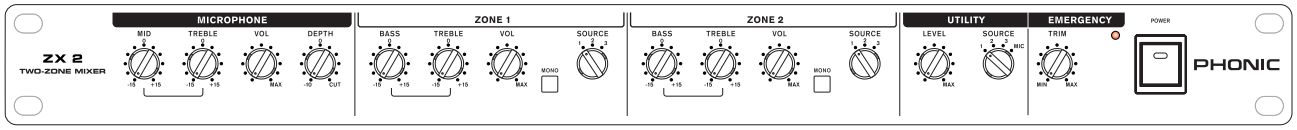
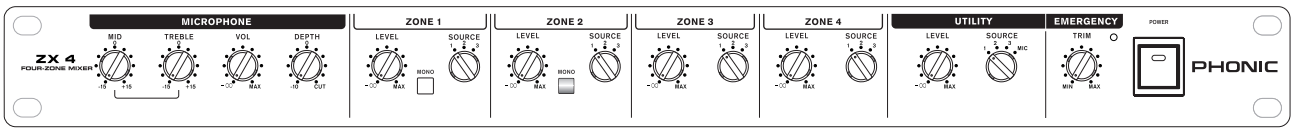
PHONIC

ZX2 / ZX4

Zone Mixer





ENGLISH

User's Manual

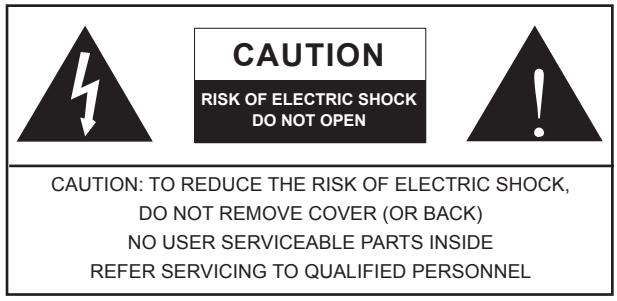
IMPORTANT SAFETY INSTRUCTIONS

The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus. The MAINS plug is used as the disconnect device, the disconnect device shall remain readily operable.

Warning: the user shall not place this apparatus in the confined area during the operation so that the mains switch can be easily accessible.

1. Read these instructions before operating this apparatus.
2. Keep these instructions for future reference.
3. Heed all warnings to ensure safe operation.
4. Follow all instructions provided in this document.
5. Do not use this apparatus near water or in locations where condensation may occur.
6. Clean only with dry cloth. Do not use aerosol or liquid cleaners. Unplug this apparatus before cleaning.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plug, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lighting storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED PERSONNEL

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

CAUTION: Use of controls or adjustments or performance of procedures other than those specified may result in hazardous radiation exposure.

ZX2 / ZX4

USER'S MANUAL

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Phonic reserves the right to improve or alter any information supplied within this document without prior notice.

V1.0 04/20/2005

INTRODUCTION

ZX2

Thank you for purchasing the ZX2, a two-zone mixer that is ideal for use in all manner of installations including hotels, convention centers, theatres, restaurants and retail outlets. They offer three stereo line inputs, one paging microphone input with EQ and ducking depth control, and an emergency input. Each zone has selectable stereo or mono output and features a subwoofer output. A mono "utility" output is also included for areas such as restrooms and foyers. Zone and utility outputs all have an individual source selector and level control, while zone outputs have an added high and low EQ. An emergency interface connector allows for override control and insert of emergency message paging. The added option of remote volume control for each zone makes the ZX2 a must have for your zone mixing requirements.

ZX4

Thank you for purchasing the ZX4, a four-zone mixer that is ideal for use in all manner of installations including hotels, convention centers, theatres, restaurants and retail outlets. They offer three stereo line inputs, one paging microphone input with EQ and ducking depth control, and an emergency input. Four zone outputs provide maximum zone separation and a mono "utility" output is also included for areas such as restrooms and foyers. Zone and utility outputs all have individual source selectors and level controls, while two zones are stereo/mono selectable. An emergency interface connector allows for override control and insert of emergency message paging. The added option of remote volume control for each zone makes the ZX4 a must have for your zone mixing requirements.

FEATURES

COMMON FEATURES

Three unbalanced stereo RCA line-level inputs with individual trim controls

Balanced XLR paging microphone and 1/4" emergency microphone inputs

Microphone ducking depth and EQ controls

Balanced 1/4" utility output provides audio to general utility areas (foyers, restrooms, etc.)

Utility output source selectable

Stereo/Mono switch on zone 1 and 2

ZX2

Two balanced 1/4" stereo zone outputs with independent source select switches and level controls

Balanced 1/4" subwoofer output on each zone

High and low EQ controls on each zone

Remote level controls can be wired to the two zones for applications requiring remote adjustment of audio levels

ZX4

Four balanced 1/4" stereo zone outputs with independent source select switches and level controls

Remote level controls can be wired to the four zones for applications requiring remote adjustment of audio levels

INSTALLATION

Rack Mounting

The Phonic ZX2 and ZX4 zone mixers are standard 1 RU rack mountable mixers. An additional 4" of depth are needed behind the mixer to allow room for the back panel connectors. To avoid overheating be sure that there is enough air space around the unit for cooling and do not place the mixer in contact with, or directly on top of high temperature devices such as power amplifiers.

Connectors

ZX2 and ZX4 zone mixers use balanced XLR jacks for paging microphone input, unbalanced stereo RCA jacks for music inputs, and balanced 1/4" phone jacks for emergency audio input, zone output and utility output. RJ45 jacks provide input and output for paging and remote level control, while an RS-232 D-type 9-pin connector is provided for source link.

Impedance

The microphone input impedance is less than 2k ohms. The outputs of the ZX2 and ZX4 are electronically balanced with output impedance lower than 120 ohms. When driving transformer coupled loads, it may be necessary to create 600 ohms source impedance. For this purpose install two 247 ohms resistors in series with pin 2 and 3.

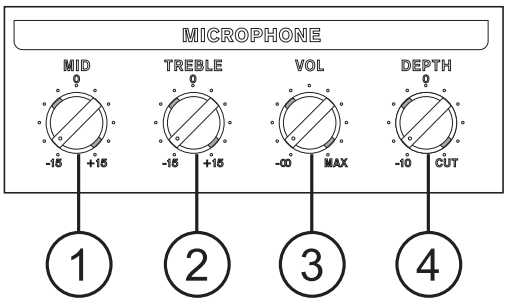
Mains Connection

The ZX2 and ZX4 use a standard IEC receptacle and a universal mains cable to make the AC mains connection. Make sure all units in the sound system are well grounded. For your own safety, do not remove the ground connection within the units or at the supply cable, or fail to make this connection at all. The audio ground is capacitor de-coupled so please isolate it from the power ground. Do not attempt to solve ground loop problems by disconnecting the power ground.

Safety Fuse Replacement

A safety fuse protects the unit from serious malfunction. The fuse will blow in case of power problems or short circuits. If this happens please replace it with an identical fuse only. If the new fuse also blows right after replacement, there is likely to be a problem with the unit. In that case, please call your nearest authorized Phonic dealer for service or repair. Never use fuses that are not rated for the unit. This may cause fire or electric shocks.

FRONT PANEL DESCRIPTIONS



zx2 / zx4

1) MID

The MID EQ is set at 800 Hz with +/-15 dB of boost or cut. Adjust this knob clockwise to add fullness to the microphone. Adjust the knob counterclockwise to reduce excessively hard or "telephone-like" sounds.

2) TREBLE (High frequency)

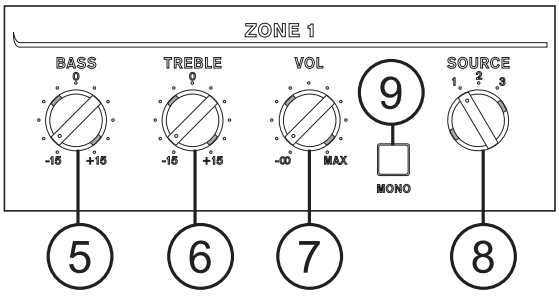
The TREBLE EQ is set at 8 KHz with +/-15 dB of boost or cut. Adjust this knob clockwise to add crispness and clarity to the microphone. Adjust the knob counterclockwise to reduce hissing or sibilance.

3) VOLUME

This knob controls the level of the balanced microphone input that is fed to each zone (and utility when MIC is selected). The output range is from +15 dB to +55 dB. Turn the knob clockwise to boost the microphone volume.

4) DEPTH

Turning this knob clockwise will gradually decrease the zone music source output and change the paging depth to make the microphone output louder than the music source.



zx2

5) BASS (ZX2 only)

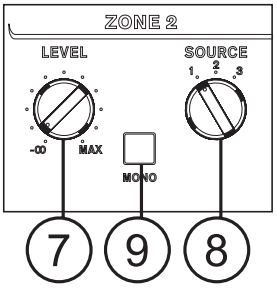
The zone BASS EQ is set at 100 Hz with +/-15 dB of boost or cut. Adjust the knob clockwise to add warmth and depth to music. Turn the knob counterclockwise to reduce hum, stage rumble or to improve a mushy sound.

6) TREBLE (ZX2 only)

The zone TREBLE EQ is set at 10 KHz with +/-15 dB of boost or cut. Adjust this knob clockwise to add crispness and clarity to the music. Adjust the knob counterclockwise to reduce hissing.

7) VOLUME/LEVEL

Adjust this control to set the level of the music that is sent to each zone. The gain range is -∞ to +20 dB. Adjust the knob clockwise to increase the volume level. Adjust the knob counterclockwise to decrease the volume level. This control does not affect the actual level of the music input at the mixer. It only adjusts the level sent to that zone.



zx4

8) SOURCE

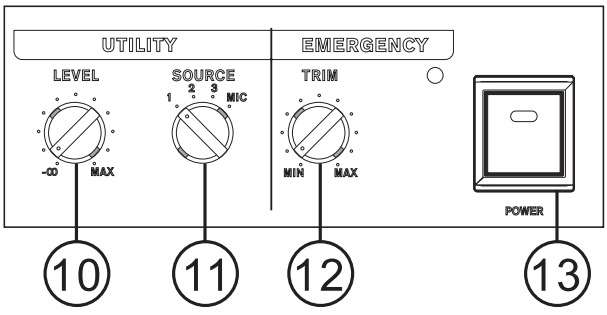
This switch allows you to select one of three music sources to be sent to the zone output. A signal source first must be connected to the source input on the back panel. (See "SOURCE INPUT" on page 8.)

9) MONO

When the MONO switch is pressed, the L & R zone outputs are summed to mono.

10) LEVEL

Adjust this control to set the level of the music or microphone that is sent to the utility zone. The gain range is -10 dB to +20 dB. Turn the knob clockwise to increase the volume level. Turn the knob counterclockwise to decrease the volume level. This control does not affect the actual level of the music input at the mixer. It only adjusts the level sent to the utility zone.



zx2 / zx4

11) SOURCE

This switch allows you to select from one of three line inputs and a microphone input to be sent to the utility output. A signal source first must be connected to an input on the back panel. (See "SOURCE INPUT" and "PAGING MICROPHONE" on page 8.)

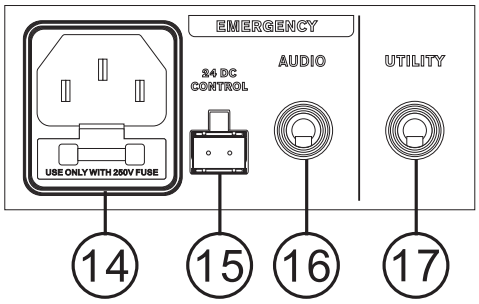
12) EMERGENCY TRIM

The TRIM knob adjusts the level of emergency audio input. When the 24 VDC control circuit is activated by an external device the red LED light illuminates and all zone and utility source outputs are replaced by the emergency audio input. If the 24 VDC control circuit is activated but there is no emergency audio input, the emergency audio input source is the paging microphone.

13) POWER

This switch turns the power for the mixer on and off. The green LED illuminates when the mixer is connected to an active AC mains power supply and the power is switched on.

REAR PANEL DESCRIPTIONS



zx2 / zx4

14) POWER CABLE RECEPTACLE

This is a standard IEC power cable receptacle. Plug the power cable in here and connect the other end of the cable to an appropriate AC mains power supply.

15) 24VDC CONTROL

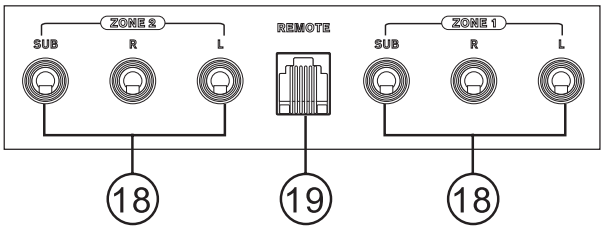
The terminal block input accepts an external 24 VDC regardless of the position of the positive and negative poles. It will activate the emergency function, which will route the external emergency message to all zone and utility outputs. It provides an override control for emergency use.

16) AUDIO

This 1/4" input jack accepts input by balanced or unbalanced phone plugs. This input works in conjunction with the 24 DC CONTROL. When the circuit is activated by a 24 VDC power supply all other audio input sources will be terminated and whichever audio source is connected to the emergency audio will be routed to all zone and utility outputs.

17) UTILITY OUTPUT

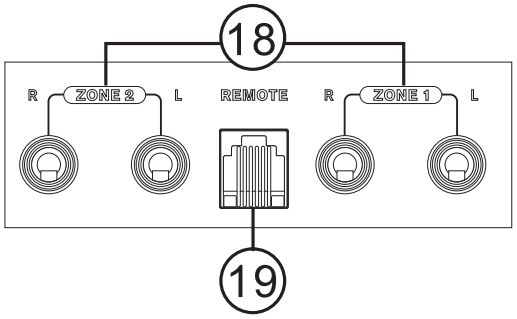
This is a standard line-level balanced 1/4" phone output jack. It also provides unbalanced connection.



zx2

18) ZONE OUTPUTS

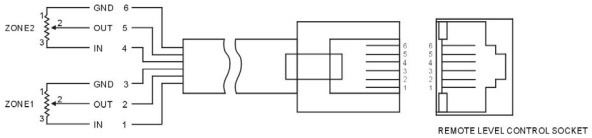
These are standard line-level balanced 1/4" phone output jacks. The zone outputs include left (L) and right (R) channel outputs. (Zone 4 on the ZX4 only has a mono output channel.) A subwoofer (SUB) output is included for better low frequency performance (ZX2 only). When operating in mono mode use the left channel.

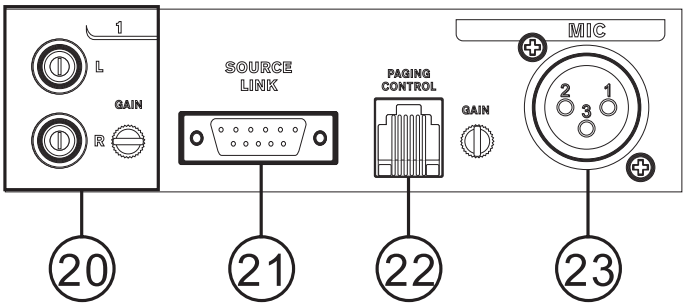


zx4

19) REMOTE LEVEL CONTROL

This socket allows for the connection of external volume control devices to remotely control music. Each remote socket controls up to two zones. When the REMOTE connection is not made, the output level of each zone will be according to the level selected on the mixer. Please use a 10k ohms potentiometer as the remote level controller.





zx2 / zx4

20) SOURCE INPUT

These are unbalanced line-level stereo RCA inputs. There are three stereo music input sources. Each includes a gain control with a range of –10 dB to +20 dB.

21) SOURCE LINK

The source link is an RS-232 D-type 9-pin connector that distributes the three source inputs to the next compatible zone mixer in the series. It also functions to receive the source inputs from a ZX2 or ZX4 zone mixer. This function allows the source inputs from one Phonic zone mixer to be used for many other Phonic zone mixers while simplifying wiring schemes.

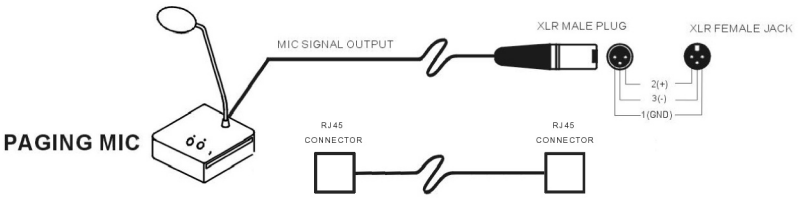
22) PAGING CONTROL

This is an RJ45 jack that is used to connect the control for a paging microphone to the mixer.

23) PAGING MICROPHONE

This is a balanced XLR jack that is used to connect the audio for a paging microphone to the mixer. It includes a gain control with a range of +15 dB to +55 dB.

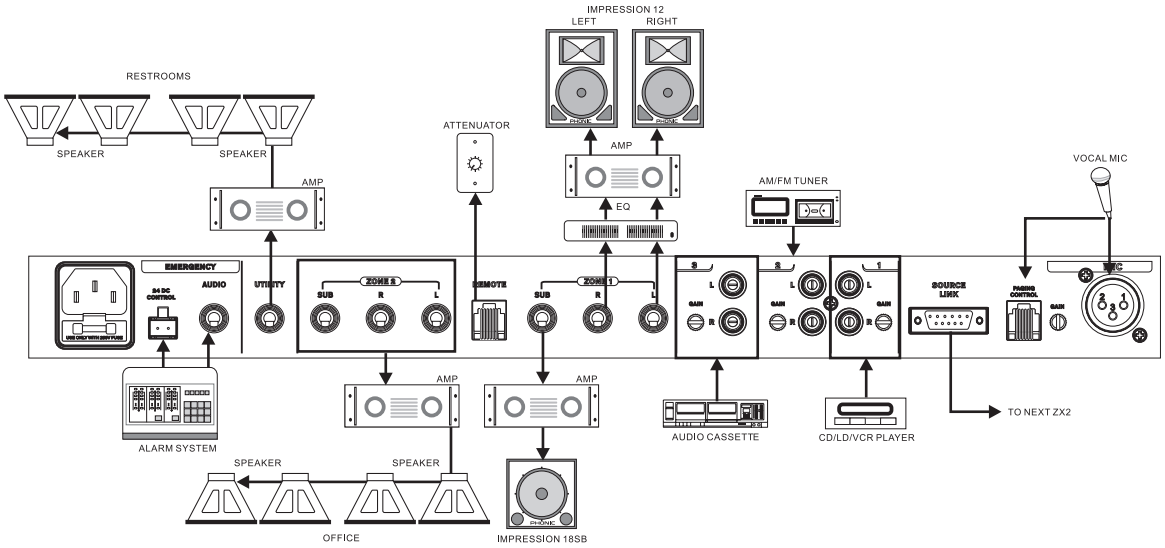
The paging microphone connects to the mixer through the XLR input and the paging control. The following is a diagram detailing how to make the connection.



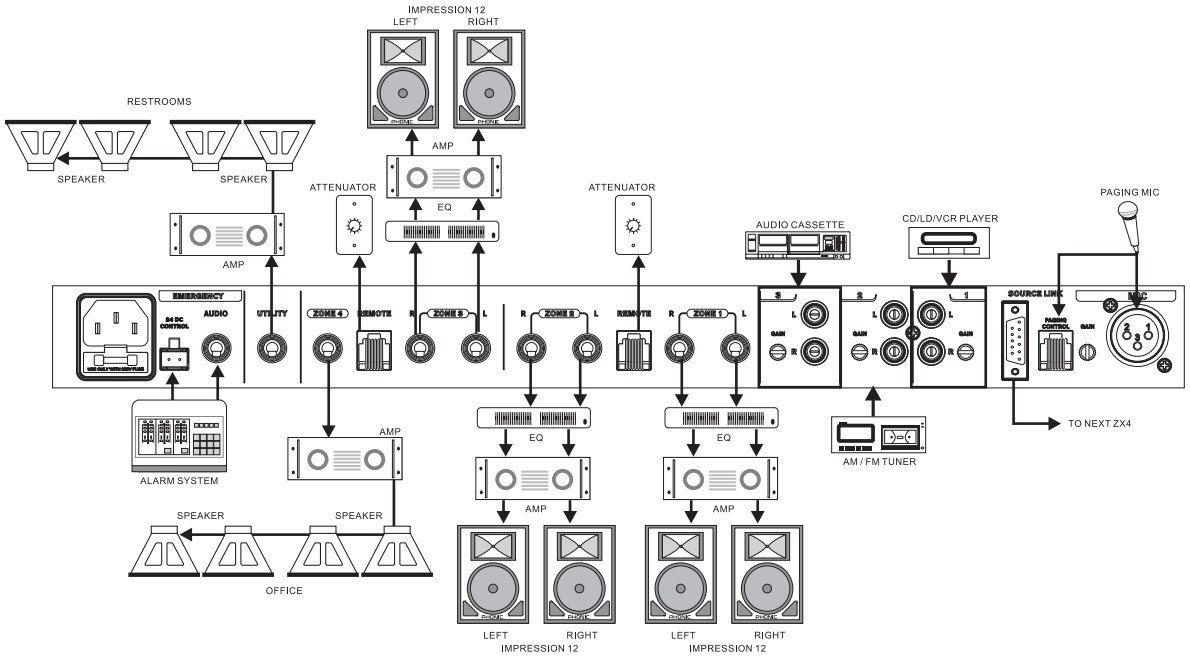
APPLICATIONS

The following diagrams illustrate some of the most common applications and wiring for the ZX2 and ZX4 zone mixers.

Office



Hotel / Convention Center



SPECIFICATIONS

INPUT	
Microphone	
Input Impedance	2 kΩ
Gain	+15 ~ +55 dB
Frequency Response	40 Hz - 20 kHz, ±0.5 dB
EIN	-128 dBu
CMRR	100 dB @ max. gain
Phantom Power	+15V
Input Connectors	Balanced XLR
Stereo BGM Input	
Input Impedance	40 kΩ
Gain	-10 ~ +20 dB
Frequency Response	40 Hz - 20 kHz, ±0.5 dB
Input Connectors	Unbalanced stereo RCA
Emergency Audio	
Input Impedance	14 kΩ
Gain	-10 ~ +10 dB
Frequency Response	50 Hz - 20 kHz, ±0.5 dB
Input Connectors	Balanced TRS 1/4" phone jack
Panic Override	+24 VDC
Input Connectors	24 VDC terminal
OUTPUT	
Stereo Zone Output	
Impedance	120 Ω
Gain	-10 ~ +20 dB
Frequency Response	40 Hz - 20 kHz, ±0.5 dB
Paging Override Depth	-10 dB ~ Cut
Output Connectors	Balanced TRS 1/4" phone jack
Utility Output	
Impedance	120 Ω
Frequency Response	40 Hz - 20 kHz, ±0.5 dB
Gain	-10 - +20 dB
Output Connectors	Balanced TRS 1/4" phone jack
SYSTEM	
THD	0.05%
Crosstalk	-75 dB @ 1 kHz between any 2 outputs
Mains Power	100~120, 200~240 VAC, 50/60 Hz
Size (WxHxD)	482 x 44.5 x 168 mm (19" x 1.75" x 6.6")
Weight	2.5 kg (5.5 lbs.)

REFERENCE BOOKS

Phonic recommends the following books for those interested in advanced audio engineering and sound system operation:

Sound System Engineering by Don and Carolyn Davis, Focal Press, ISBN: 0-240-80305-1

Sound Reinforcement Handbook by Gary D. Davis, Hal Leonard Publishing Corporation, ISBN: 0-88188-900-

Audio System Design and Installation by Philip Giddings, Focal Press, ISBN: 0-240-80286-1

Practical Recording Techniques by Bruce and Jenny Bartlett, Focal Press, ISBN: 0-240-80306-X

Modern Recording Techniques by Huber & Runstein, Focal Press, ISBN: 0-240-80308-6

Sound Advice – The Musician's Guide to the Recording Studio by Wayne Wadham, Schirmer Books, ISBN: 0-02-872694-4

Professional Microphone Techniques by David Mills Huber, Philip Williams. Hal Leonard Publishing Corporation, ISBN: 0-87288-685-9

Anatomy of a Home Studio: How Everything Really Works, from Microphones to Midi by Scott Wilkinson, Steve Oppenheimer, Mark Isham. Mix Books, ISBN: 091837121X

Live Sound Reinforcement: A Comprehensive Guide to P.A. and Music Reinforcement Systems and Technology by Scott Hunter Stark. Mix Books, ISBN: 0918371074

Audiopro Home Recording Course Vol 1: A Comprehensive Multimedia Audio Recording Text by Bill Gibson. Mix Books, ISBN: 0918371104

Audiopro Home Recording Course Vol 2: A Comprehensive Multimedia Audio Recording Text by Bill Gibson. Mix Books, ISBN: 0918371201

TO PURCHASE ADDITIONAL PHONIC GEAR AND ACCESSORIES

To purchase Phonic gear and optional accessories, contact any authorized Phonic distributor. For a list of Phonic distributors please visit our website at www.phonic.com and click on Get Gear. You may also contact Phonic directly and we will assist you in locating a distributor near you.

SERVICE AND REPAIR

Phonic has over 100 service centers worldwide. For replacement parts, service and repairs please contact the Phonic distributor in your country. Phonic does not release service manuals to consumers, and advice users to not attempt any self repairs, as doing so voids all warranties. You can locate a dealer near you at www.phonic.com.

WARRANTY INFORMATION

Phonic stands behind every product we make with a no-hassles warranty. Warranty coverage may be extended, depending on your region. Phonic Corporation warrants this product for a minimum of one year from the original date of purchase against defects in material and workmanship under use as instructed by the user's manual. Phonic, at its option, shall repair or replace the defective unit covered by this warranty. Please retain the dated sales receipt as evidence of the date of purchase. You will need it for any warranty service. No returns or repairs will be accepted without a proper RMA number (return merchandise authorization). In order to keep this warranty in effect, the product must have been handled and used as prescribed in the instructions accompanying this warranty. Any tempering of the product or attempts of self repair voids all warranty. This warranty does not cover any damage due to accident, misuse, abuse, or negligence. This warranty is valid only if the product was purchased new from an authorized Phonic dealer/distributor. For complete warranty policy information, please visit http://www.phonic.com.

CUSTOMER SERVICE AND TECHNICAL SUPPORT

We encourage you to visit our online help at http://www.phonic.com/help/. There you can find answers to frequently asked questions, tech tips, driver downloads, returns instruction and other helpful information. We make every effort to answer your questions within one business day.

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